

METHOD OF IMPROVING ADHESION BETWEEN TWO DIELECTRIC FILMS

ABSTRACT OF THE DISCLOSURE

5 A method of improving adhesion between layers in the formation of a semiconductor device and integrated circuit, and the resultant intermediate semiconductor structure, which include a substrate layer with a low k insulating layer thereover. The low k insulating layer includes a treated surface area of adsorbed gaseous particles. This treated surface area is formed by flowing a gas,
10 preferably, silane, disilane, dichlorosilane, germane or combinations thereof, over a surface of the heated low k insulating layer for adsorption of such gaseous particles onto the heated surface, wherein the insulating layer maintains its original thickness. A capping layer is then deposited directly over the insulating layer wherein the treated surface area of the insulating layer significantly improves
15 adhesion between the insulating layers and the capping layers to prevent delamination therebetween during subsequent processing steps of forming the integrated circuit.